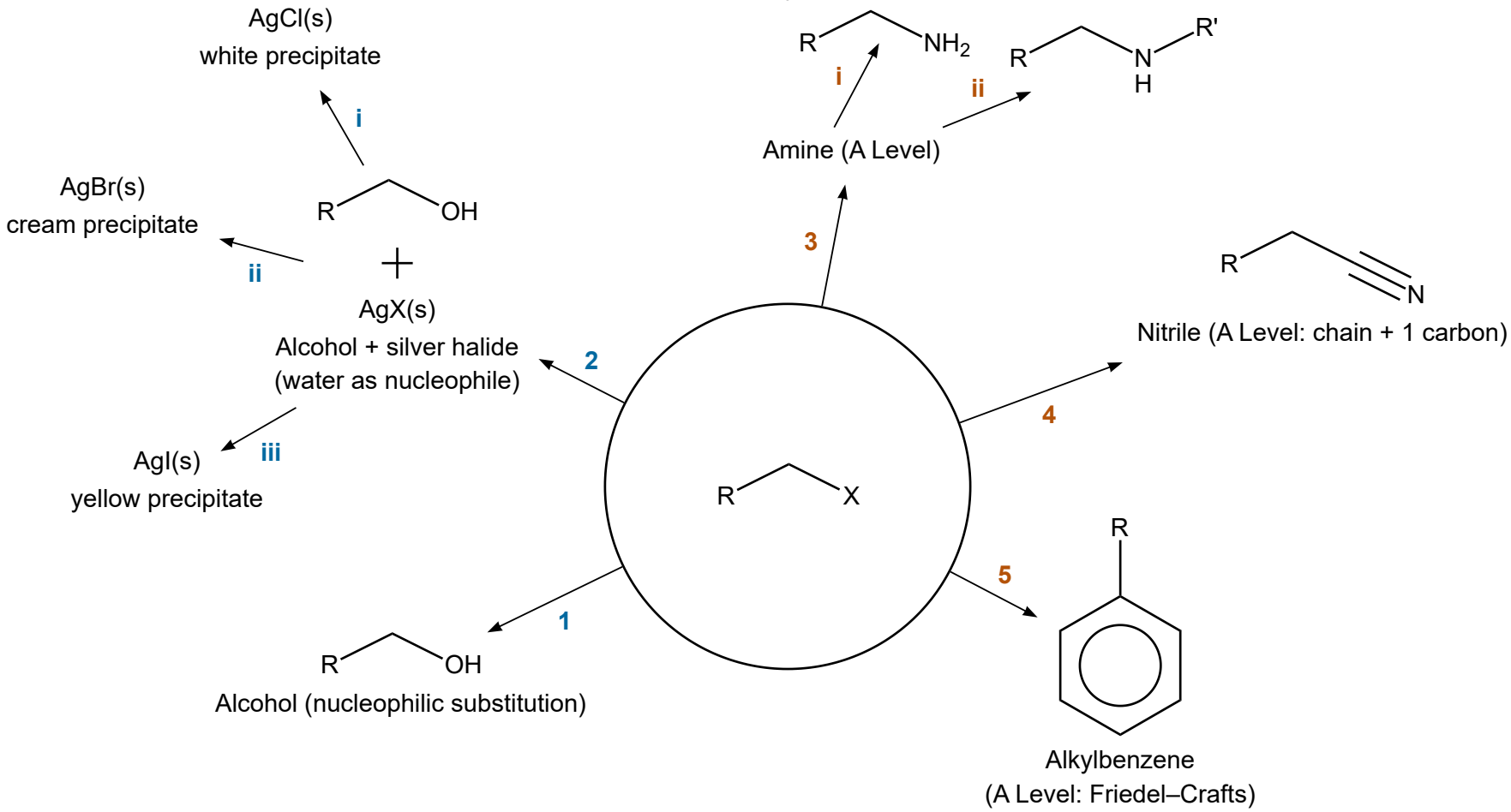
Haloalkanes Map

OCR A Level Chemistry A · 4.2.2 Haloalkanes



1 hydrolysis (substitution): NaOH(aq) (aqueous alkali), heat under reflux

2 hydrolysis: water, $AgNO_3$(aq) and ethanol, about 50 °C water bath
i slowest (C–Cl strongest)
ii intermediate rate
iii fastest (C–I weakest)

3 substitution: excess ethanolic NH_3, heat in a sealed tube
i excess ethanolic NH_3, heat → primary amine
ii primary amine, $R'NH_2$, heat in ethanol → secondary amine

4 substitution: CN^- (NaCN or KCN) in ethanol, heat under reflux

5 substitution (electrophilic): benzene, halogen carrier ($AlCl_3$), anhydrous, warm

Rate of hydrolysis: C–I > C–Br > C–Cl > C–F (bond enthalpy decreases).
CFCs: UV releases Cl• radicals that catalyse ozone breakdown (also •NO).

hydrolysis substitution

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